

# INFRASTRUCTURE REPORT

## MOSS VALE ROAD NORTH

### URBAN RELEASE AREA

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**Client: Moss Vale Road North Owners Group**



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#### Table of Revisions

Rev	Date	Details
01	8/3/18	Issued for Client Review
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## 1. INTRODUCTION

Allen Price and Scarratts (APS) has been engaged to assist with preliminary planning by a number of property owners in the Moss Vale Road North (MVRN) Urban Release Area (URA). The intention of the Moss Vale Rd North Owners Group is to take all necessary steps to make the MVRN URA ready for subdivision approval as soon as possible. The expected lot yield of the proposal is approximately 2,000 residential allotments plus some mixed use development, business park and associated public reserves.

The site has been identified by Shoalhaven City Council as being suitable for residential development as outlined in the Nowra-Bomaderry Structure Plan. SLEP2014 provides the statutory pre-requisites before subdivision of an urban release area can occur. SCC must be satisfied that the conditions for continued implementation of the NBSP are achieved.

Shoalhaven City Council (SCC) considers that the pre-conditions of Part 6 of the SLEP 2014 have or can be met, therefore, the preparation of a DCP is to be commenced. Council is prioritising the release of certain greenfield sites including this site (which is listed as second only to Moss Vale Road South (MVRS) URA). Council has agreed that the Moss Vale Rd North Owners Group through Allen Price and Scarratts Pty Limited will engage consultants for the preparation of supporting studies for the DCP. Furthermore, that the DCP can be developed by the owners' subject to ongoing consultation with SCC and ultimately SCC approval.

SCC is currently in the process of developing a DCP for the Moss Vale Road South (MVRS) URA.

The primary purpose of this Utilities Investigation Report is to investigate and report on the provision of essential services (water, sewer and electricity) to the Moss Vale Rd North URA.

The brief which this report has been prepared to address is outlined below:

*Preparation of an infrastructure assessment and infrastructure delivery plan to support the Master Plan and Development Control Plan including consideration of:*

- *Opportunities for relocation of HV transmission lines and gas pipeline*
- *Electricity supply capacity.*
- *Sewerage capacity.*
- *Water supply capacity.*
- *Reticulated gas supply opportunities.*
- *Telecommunications infrastructure.*

*Consultation with appropriate service providers such as:*

- *Shoalhaven Water re water/sewer.*
- *Endeavour Energy*
- *Jemena (Gas)*
- *NBN Co.*

*An Infrastructure Delivery Plan will take into consideration the various infrastructure components required to develop the URA and specifically at what stages each infrastructure will be required.*

*Contacts with the relevant agencies can be provided by Council.*

*A staging plan of the overall URA will need to be prepared as one of the key deliverables of this study. This will be a key consideration in the future staging of the URA which will then be detailed in the DCP.*

*Whilst it is acknowledged that a traffic assessment will run parallel to the Infrastructure Study, the consultant for this brief will need to consider the road network as a key infrastructure component, in particular, with respect to the staging plan and overall infrastructure delivery plan. As such, RMS will need to be one of the relevant bodies to consult with.*

These matters are all addressed within this report.

## 2. THE SITE

The existing site comprises of multiple parcels totalling approximately 266Ha of land. The site is located approximately 1.5km (straight line) East from Cambewarra Village, 1.5km from Princes Hwy along Moss Vale Road, and 5km North/North West from Nowra CBD (see figure 1).

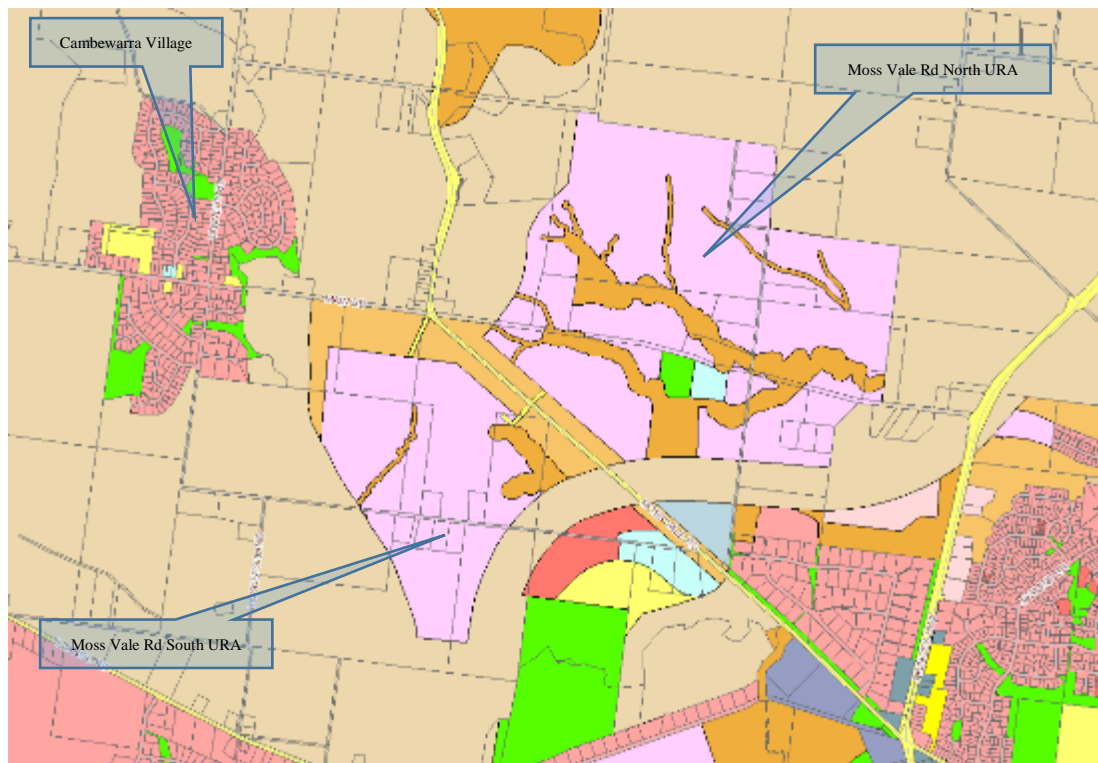
This area does not include roads that are zoned with an urban zone that lie within the zone boundary. It is worth noting that not all of the affected landholdings lie within the URA boundary, and that not all of the land within the URA is zoned for an urban use. A number of the allotments that are along the edges of the URA contain land outside the URA that is zoned RU1, SP2 or E3. A reasonable amount of the land within the URA boundary is zoned E2, where there are watercourses that traverse the land.

The subject land is comprised of 17 separate landholdings. The land owners responsible for approximately 216.4Ha of the affected land which equates to 81% of the total landholdings and 87% of the R1 zoned land in the URA have joined together as an informal co-operative to commence planning work for development of their landholdings in accordance with the proposed land use zones.

Property Address	Lot/DP	Approx. Area of Affected Landholding	Approx Area of Urban Land of various zones
220 Moss Vale Rd, Cambewarra	Lot 4 DP268209	83.3Ha	33.7Ha – R1 2.3Ha – B1 5.5Ha – B7 2.6Ha – RE1
344 Moss Vale Rd, Cambewarra	Lot 54 DP1024592	23.8Ha	5.0Ha – R1
91A Bells Lane, Cambewarra	Lot 3 DP708356	2.8Ha	0.95Ha – R1
91B Bells Lane, Cambewarra	Lot 4 DP708356	17.9Ha	11.05Ha – R1
125 Bells Lane, Cambewarra	Lot 2 DP630811	2.3Ha	2.3Ha – R1
66A Bells Lane, Meroo Meadow	Lot 3 DP847399	1.0Ha	1.0Ha – R1
66B Bells Lane, Meroo Meadow	Lot 21 DP854369	1.0Ha	1.0Ha – R1
66C Bells Lane, Meroo Meadow	Lot 22 DP854369	1.0Ha	1.0Ha – R1
66D Bells Lane, Meroo Meadow	Lot 1 DP882059	2.6Ha	2.6Ha – R1
91D Bells Lane, Meroo Meadow	Lot 2 DP1191186	4.1Ha	3.44Ha – R1

191 Bells Lane, Meroo Meadow	Lot 1 DP1191186	63.6Ha	55.92Ha – R1
194 Bells Lane, Meroo Meadow	Lot 2 DP582036	2.3Ha	2.3Ha – R1
202 Bells Lane, Meroo Meadow	Lot 5 DP618693	6.3Ha	2.5Ha – R1
132 Bells Lane, Meroo Meadow	Lot 6 DP618693	2.0Ha	2.0Ha – R1
Bells Lane, Meroo Meadow	Lot 7 DP618693	27.32Ha	18.41Ha – R1
50 Abernethy's Lane, Meroo Meadow	Lot 1 DP1134376	3.6Ha	0.61Ha – R1
112 Bells Lane, Meroo Meadow	Lot 2 DP1134376	21.2Ha	15.23Ha – R1
Total Land Holdings		266.1Ha	159.0Ha – R1 2.3Ha – B1 5.5Ha – B7 2.6Ha – RE1

*Table 1: List of Affected Landholdings*



*Figure 1: Site Plan*

The site predominantly is comprised of gently sloping land to the South-east with a 50m fall across the site. A majority of the site generally cleared rural land that has previously been used for grazing and other rural activities. Some bushland still exists near the Southern boundary of the site and each allotment contains a rural dwelling and other associated sheds.

### 3. LOCAL INFRASTRUCTURE REVIEW

The following infrastructure has been reviewed and discussions held with each service provider as outlined below:



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Sewer Reticulation – Shoalhaven Water  
Water Supply – Shoalhaven Water  
Electricity Reticulation – Endeavour Energy  
Waste Collection and Disposal – Shoalhaven City Council  
Telecommunications – Opticomm  
Gas – Jemena  
General Infrastructure – Shoalhaven City Council  
Road Infrastructure – Shoalhaven City Council

A drawing showing approximate locations of existing infrastructure is shown in Appendix A.

### **3.1. SEWERAGE INFRASTRUCTURE**

#### **3.1.1 PHYSICAL INFRASTRUCTURE**

The site is currently un-serviced with sewerage reticulation.

Shoalhaven Water's Development Servicing Plan (DSP) for Sewerage Services (November 2005) identified that a new sewerage pumping station (SPS) and rising main (RM) is required to service the site.

Further, Shoalhaven Water is in the process of updating its DSP documents and Appendix B contains a detailed map of the proposed sewerage infrastructure to be provided to service the URA.

Shoalhaven Water has proposed a single SPS to service the URA, which will be located near the eastern side of the residential component of the land adjacent to Abernethy's Creek, at its lowest point. This infrastructure is identified as SPS MVR-N and will be sized to cater for the entire URA. The indicative location of the SPS and route of the RM is shown indicatively on the plan attached in Appendix B. This RM will link with a second SPS (MVR-S) which will also service Moss Vale Road South URA.

Currently MVR-S is expected to be delivered in 2018/2019 with MVR-N expected to be delivered in 2019/2020.

As the SPS, RM and downstream gravity sewerage is included in the draft DSP, the construction of this infrastructure will be the responsibility of Shoalhaven Water. The work will be funded by developers through Section 64 contributions. It is possible that some lengths of gravity sewer in the catchment will also be constructed by Shoalwater to facilitate development on a number of different fronts to provide flexibility for the development of the URA.

Sewerage reticulation to each individual allotment will generally be the responsibility of each developer. Draft sewerage reticulation layouts for the sites will be developed at DA stage. It is expected that a conventional gravity sewerage reticulation system will drain the majority of the URA. Any lots within the development that cannot be serviced via gravity lines will be serviced under a low-pressure system.

In conclusion, the sewerage infrastructure that is proposed to be installed by Shoalhaven Water will adequately service the development at an appropriate time and will provide no constraint to development proceeding.

#### **3.1.2 DEVELOPMENT CONTRIBUTIONS**

The development contributions payable will be in accordance with the new DSP's when adopted and as published by Shoalhaven Water each year.

Contributions are generally paid to Shoalhaven Water prior to the release of a Subdivision Certificate.

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## **3.2. WATER SUPPLY INFRASTRUCTURE**

### **3.2.1 PHYSICAL INFRASTRUCTURE**

The site is currently un-serviced with water reticulation infrastructure.

Shoalhaven Water's Development Servicing Plan (DSP) for Water Services (November 2005) identified that new water supply infrastructure was required to service the site.

Further, Shoalhaven Water is in the process of updating its DSP documents and Appendix C contains a detailed map of the proposed water infrastructure to be provided to service the URA.

Shoalhaven Water has proposed a new reservoir at Cambewarra and new trunk water mains to service the URA, along with Moss Vale Rd South URA.

This infrastructure will be sized to cater for the entire URA. The indicative location of the reservoir and route of the trunk mains are shown indicatively on the plan attached in Appendix C.

This infrastructure is expected to be delivered between 2018/2019 and 2021/22.

As the trunk water infrastructure is included in the draft DSP, the construction of this infrastructure will be the responsibility of Shoalhaven Water. The work will be funded by developers through Section 64 contributions.

Water reticulation to each individual allotment will generally be the responsibility of each developer. Draft water reticulation layouts for the sites will be developed at DA stage. It is expected that a conventional water reticulation system will service the majority of the URA. Water mains will be provided in each roadway adjacent to proposed lots and will be sized to cater for the necessary requirements of Shoalhaven Water for pressure and flow. Hydrants will be provided in accordance with AS2419.1 to ensure suitable water is available for fire fighting purposes.

Shoalhaven Water has confirmed recently that environmental studies and concept designs for the trunk water infrastructure have been completed. These are not currently available to the public as they are internal working documents within Council. Shoalhaven Water has confirmed verbally that it is still proposed to provide the necessary infrastructure in accordance with Stage 1 release of the development.

In conclusion, the water supply infrastructure that is proposed to be installed by Shoalhaven Water and the developer will adequately service the development and provides no constraints to development.

In conclusion, the water infrastructure that is proposed to be installed by Shoalhaven Water will adequately service the development at an appropriate time and will provide no constraint to development proceeding.

### **3.2.2 DEVELOPMENT CONTRIBUTIONS**

The development contributions payable will be in accordance with the new DSP's when adopted and as published by Shoalhaven Water each year.

Contributions are generally paid to Shoalhaven Water prior to the release of a Subdivision Certificate.

### **3.2.3 ALTERNATIVES TO TOWN WATER SUPPLY**

Through the BASIX program and the developer's commitments it is possible to install rainwater tanks on each lot (varying between 3-5kL) to be utilised in toilet flushing, clothes washing and outdoor irrigation. This alleviates some of the load on the town water supply and extends the capacity of existing water supply infrastructure.

Alternatives for primary contact water (eg drinking and washing) are not appropriate to be considered for public health reasons.

### 3.3. ELECTRICITY INFRASTRUCTURE

#### 3.3.1 PHYSICAL INFRASTRUCTURE

The site is currently serviced with overhead electrical cables infrastructure owned and operated by Endeavour Energy (EE). The location of the infrastructure is shown on APS drawing 25830-801 attached in Appendix A.

Bomaderry Zone Substation and the high voltage distribution network supplied by Nowra Zone Substation has been upgraded in the last couple of years to cater for future growth in this area.

Endeavour Energy has provided the following advice:

*"The proposed greenfield residential development being Moss Vale Rd North (approximately 2000 lots) is located 4.5km from Endeavour Energy's Bomaderry Zone Substation which would initially supply this development.*

*There is currently capacity available for up to 300 lots from the existing network and this will be made available for the initial stages of development in both the Moss Vale Rd North and South precincts. Existing spare capacity will be allocated to proponents as they make firm applications to Endeavour Energy's Network Connections section. Additional short-term upstream capacity is planned to be developed and funded by Endeavour Energy through the establishment of an additional 11kV distribution feeder into the North Nowra, Bangalee and Cambewarra areas. Design and construction is planned to commence in the 2018/19 financial year and will provide capacity for an additional 400 lots.*

*Further upstream capacity upgrade projects will be developed and funded by Endeavour Energy with ultimately a new zone substation in the Cambewarra area. The acquisition of a suitable block of land will be negotiated with either a developer or a private landholder. Endeavour Energy will commence formal land acquisition processes in 2018.*

*A strategic area plan will be completed in mid-2018 for the ultimate requirements of the area. The development individual projects based on principles outlined in a strategic area plan will be developed separately and funding sought for each project at the appropriate time in line with an evidence based (actual committed load) approach.*

*High voltage (11kV) distribution works for connection and reticulation of the subdivision are contestable works arranged by the developer via Accredited Service Providers. Currently, Endeavour Energy provides reimbursement to developers for 11kV infrastructure installed for new subdivisions.*

*Endeavour is committed to making provisions for proponents to connect to its existing network in a fair and equitable manner. Once evidence of proposed and actual load materialises then the strategies from the strategic area planned can be mobilised to meet need dates as required."*

This is the normal process for provision of electrical infrastructure to subdivisions of this nature.



Low voltage electrical reticulation to each allotment, along with the supporting high voltage network, will be the responsibility of the developer. APS has not prepared draft electrical reticulation layouts for the site at this time as these will not be a constraint to development. However, an overall electrical reticulation strategy will be provided during Stage 1 detailed design stage to limit the developer's infrastructure costs and to rationalise the location of substation infrastructure.

The existing lots are serviced by overhead electricity fed from overhead mains off Moss Vale Road and Bells Lane. It is proposed that this overhead cable will be progressively converted to an underground network as development works progress throughout the site. Eventually, the existing residences will be fed from an underground electrical reticulation system.

Along the eastern edge of the MVRN development is a 90m wide easement containing two EE 132KV feeder lines. This easement primarily affects three of the current lots. Investigations are underway which are considering the feasibility of reducing the width this easement to approximately half of its current width to facilitate additional development land.

A Category 3 ASP has been engaged, and meetings have been held with Endeavour Energy and Jemena regarding their constraints for this work.

Endeavour Energy are discussing the location of a possible new zone substation on the Moss Vale RD North with one of the Moss Vale Rd North owners.

Endeavour Energy are progressively upgrading their network to facilitate development in the URA and have advised that they will not be a constraint to development progressing.

In conclusion, the electrical infrastructure that is proposed to be installed by Endeavour Energy and the developers will adequately service the development.

### **3.3.2 DEVELOPMENT CONTRIBUTIONS**

Generally, underground electrical infrastructure is provided by each developer to service their own development including HV (11kV) and LV (415V).

However, on occasions where lead-in infrastructure is shared between a number of developers Endeavour Energy does have a reimbursement scheme where, in the long term costs can be shared between the benefitting developers.

The final breakdown on funding arrangements will be determined once detailed electrical designs are carried out and works approved by Endeavour Energy.

## **3.4. WASTE DISPOSAL INFRASTRUCTURE**

### **3.4.1 PHYSICAL INFRASTRUCTURE**

Shoalhaven City Council currently operates waste collection services throughout the LGA through waste disposal contractors, Suez. Council also self-operates waste disposal facilities throughout the LGA, the closest being at West Nowra, approximately 6.2km (straight line) from the site.

Council has advised, through it's Waste Services Section, that kerbside collection services will be provided on the following conditions:

- The development is in an urban area;

- The roads within the development have been constructed to Council's standards;
- The roads are owned and maintained by Council;
- Properties requiring kerbside collection are residential in nature; and
- Commercial allotments will be assessed at the time of any future development application over the land

As the development complies with the above requirements, kerbside collection services will be available to the site.

In conclusion, waste disposal services provided by Council provide no constraint to development proceeding.

### **3.4.2 DEVELOPMENT CONTRIBUTIONS**

No development contributions for waste disposal services are payable by the developer. The waste collection service is paid by the individual allotment owners on quarterly rates notices.

## **3.5. TELECOMMUNICATIONS INFRASTRUCTURE**

### **3.5.1 PHYSICAL INFRASTRUCTURE**

The site is currently serviced with telecommunications services to the existing dwellings through Telstra.

Telecommunications infrastructure will be provided by the developer to suit NBN Co's requirements. DBYD records indicate that an NBN service is available along Moss Vale Road although upgrades to lead-in infrastructure will be required. The design and installation of "pits and pipes" will be at the developers expense with design and installation to be approved by the relevant authority. All pits and pipes will be "NBN Co ready" in accordance with current design standards.

The Australian government's 'Telecommunications in New Development Policy' allows telecommunications to be provided by compliant wholesale carriers. NBNCo and Opticomm are two such providers that have the capacity to service the MVRN URA.

Discussions have also been held with TPG who wish to bring broadband services into the site and these will also continue as development progresses.

In conclusion, the telecommunications infrastructure will be installed by the developer in accordance with current design and construction standards and will not be a constraint to development progressing.

Telecommunications is a non-essential service, so the provision of these services does not affect the timing of the development of the URA.

### **3.5.2 DEVELOPMENT CONTRIBUTIONS**

Generally, a per lot fee is payable to NBN for the provision of the telecommunication service and in some cases a fee for "backhaul" is also required where significant lead-in infrastructure is required.

## **3.6. GAS INFRASTRUCTURE**

### **3.6.1 EASTERN GAS PIPELINE**

The eastern gas pipeline (EGP) which is owned and operated by Jemena passes through the site and shown on the plan in Appendix A.

Jemena has advised the following:

- It is extremely unlikely the EGP could be relocated given the critical nature of its supply network
- Jemena will not permit a reduction in the easement width (20m)
- HV transmission poles are not permitted within the EGP easement. Restrictions may also apply outside and over the easement.
- Generally, no civil works are allowed within the easement however minor works and road crossings are allowed subject to consultation and approval by Jemena. Jemena has requested early involvement in the planning to ensure safety and security of the EGP.

Meetings have already been held with Jemena to discuss the proposed works in the URA and these discussions will need to continue during the DA preparation phase. The potential reduction in width of the electrical transmission easement will also involve discussions and approval from Jemena with respect to their assets.

### **3.6.2 GAS RETICULATION**

The site is not currently serviced with gas infrastructure.

Discussions have been held with Jemena who are considering bringing gas infrastructure to the site. They are in the process of developing their own internal business case to determine how they might service the URA. Based on the discussions held to date, it is expected that the Moss Vale Rd North and South URA's will be serviced by gas infrastructure.

Discussions with Jemena will continue to facilitate the provision of gas to the site.

Normally, during the Construction Certificate phase, Jemena can be approached to provide reticulated gas services to the URA, should developers choose to provide this service. Provision of the service would be up to Jemena's commercial team.

As an alternative to reticulated gas supply, bottled gas supply will be available to future residents and businesses in the MVRN growth area via wholesale gas retailers.

Gas is a non-essential service, so the provision of these services does not affect the timing of the development of the URA.

## **3.7. ROAD INFRASTRUCTURE**

### **3.7.1 PHYSICAL INFRASTRUCTURE**

The site is criss-crossed with a number of existing public roads which provide coincidental legal and practical access to the various parcels of land within the URA, including Moss Vale Rd, Bells Lane and Abernethy's Lane.

As development progresses, these roads will need to be upgraded and new roads constructed to facilitate the new development. Further, a number of existing intersections will also need to be upgraded and new intersections constructed.

The principal connection points to the site are:

- from an upgraded intersection of Moss Vale Rd and Bells Lane; and

- from a new intersection of Moss Vale Rd and a new road located approximately 1km to the west of Bells Lane. (This location will provide a new intersection (most probably a roundabout) to service both Moss Vale Rd North and Moss Vale Rd South.

### 3.7.2 DEVELOPMENT CONTRIBUTIONS

The construction of some roads and intersections are likely to form part of either the SIC and a s94 Contribution Plan.

A number of s94 Contributions Plans have been established in Moss Vale Rd South URA where there is a wider benefit to the development area. It is expected that Council will also develop a number of s94 Contribution Projects for the MVRN area.

The following road and watercourse crossing projects shown in yellow dashed linetype below are suggested for inclusion in a s94 Contributions Project to be progressively rolled out through the development area.



The suggested road infrastructure will facilitate development throughout the URA and will ensure major road costs are shared equitably between the developers.

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### **3.8. GENERAL INFRASTRUCTURE**

#### **3.8.1 PHYSICAL INFRASTRUCTURE**

The Moss Vale Rd Owners Group has finalised a number of studies on the necessary infrastructure to support the MVRN growth area. These studies include passive and active open space requirements, road capacity and access, bushfire protection, emergency services provision and various other matters.

A Development Control Plan for the site has also been prepared.

It is expected that a number of Section 94 Contribution Projects will be prepared by Council to facilitate the funding of shared infrastructure.

Council has advised that liaison with property developers in the MVRN area will be undertaken during the preparation of the infrastructure plans. A small amount of this consultation has already occurred although no details have been provided to developers.

#### **3.8.2 DEVELOPMENT CONTRIBUTIONS**

Due to the preliminary nature of Council's infrastructure studies, the exact quantum of any developer contributions is not known.

A draft s94 Contribution Plan has been developed for Moss Vale Rd South URA to fund the provision of local roads, open space and drainage works and totals \$18,691/ET. It is expected that amounts similar to this will also exist in Moss Vale Rd North URA.

### **4. STATE INFRASTRUCTURE REVIEW**

#### **4.1. STATE INFRASTRUCTURE CONTRIBUTION**

##### **4.1.1 Physical Infrastructure**

At the time of writing, the NSW Government through the Department of Planning and Environment are in the process of preparing a State Infrastructure Contribution (SIC) for the Illawarra and Shoalhaven.

The kind of infrastructure provided under a SIC may include:

- Health Infrastructure
- Road Infrastructure
- Education Infrastructure
- Emergency Services Infrastructure

##### **4.1.2 Development Contributions**

At the November 2017 Urban Development Program Developer Forum, DPE advised that the plan was to finalise the SIC by December 2018. It is now expected the SIC will be determined in the early part of 2019.

Whilst the quantum of the SIC is not known, a comparison is provided below which has been determined in the draft Hunter SIC. As you can see, the financial impact of any SIC varies widely depending upon location and we have no way of knowing at this time what the final SIC will be for the local area.



Table 1: **Proposed contribution rates**

Service catchment area	Greenfield residential contribution rate	Greenfield industrial contribution rate*
Lower Hunter	\$10,664 per lot or dwelling	\$38,232 per hectare of net developable area
Mid-Coast	\$658 per lot or dwelling	\$38,232 per hectare of net developable area
Upper Hunter	\$658 per lot or dwelling	\$38,232 per hectare of net developable area

Note: The rates shown are for the 2017/18 financial year. Indexation is proposed to be applied from 1 July 2018. The contribution rate will be adjusted for the cost of construction on 1 July each year. The current contribution rate for each year will be published on the NSW Department of Planning and Environment's website.  
 \*amended 18/12/2017

## 5. STAGING

The staging of the release for any urban release area be it large or small is a critical aspect of the roll-out of the development. Staging is often significantly affected by infrastructure provision, particularly gravity services such as sewer reticulation.

For MVRN URA, the staging is principally governed by three key issues being road access, gravity sewer and the desire to allow the early development of the commercial zone.

Bells Lane provides an existing access point to the URA and it is anticipated that this will be the principal access point to the development from an early stage.

The proposed sewer pumping station in the east of the URA is also a critical piece of infrastructure that will drive the staging to occur from this location and which will then expand out to the north, north-west, west, and south-west. It is expected that a length of gravity sewer main will also be funded as part of the s64 works from the SPS site to the intersection of Bells Lane and Abernethy's Lane which will facilitate development opening up on a number of fronts from this point.

Further, it is seen as critical to the development of the area that the commercial zone is brought on line in the early stages of the development to provide a central focal point for the URA.

In light of the above constraints, a staging plan has been developed which proposes the early stages of development along Abernethy's and Bells Lanes, plus along the new link road from Moss Vale Rd. This will allow a number of parcels to develop in the early stages, facilitates development radiating out from the proposed SPS, utilises the central spine of Bells Lane for initial access and allows the commercial hub to be brought on line early.

Following Stage 1, development is able to progress outwards based on the demand for land and the willingness of various owners to sell or develop their land.

Due to the fragmented nature of the ownership of the land in the URA, there is a high likelihood that development will not progress systematically through the URA in accordance with any pre-ordained staging

plan. Therefore, it is critical that the attached staging plan not be a constraint used to stymie development, but simply, the order in which develop can progress in the most cost-effective and efficient way primarily based on infrastructure provision. If a developer wishes to proceed with development in the Stage 2 area before some of the Stage 1 area is complete, then they should be able to do so. There may be increased infrastructure costs to do this, but if a developer is willing to pay those increased costs, then that is a financial decision that each developer can make.

A sketch of the proposed staging plan is attached in Appendix D.

## 6. CONCLUSION

The provision of all essential services (water, sewer, electricity) are on track and will not be a constraint to the timing or delivery of development in the Moss Vale Rd North URA.

Shoalhaven Water will be providing the sewer transportation system (sewerage pumping station, rising main and gravity main augmentation) through its Development Servicing Plan as required by the delivery timeframe of the development. Gravity reticulation will be provided throughout the estate by the developer with some low pressure sewerage units being required to drain the south-eastern corner of the site.

Shoalhaven Water will also be providing trunk water infrastructure through its Development Servicing Plan as required by the delivery timeframe of the development. Water reticulation will be provided throughout the development by the developer.

Endeavour Energy is able to supply the expected electrical demand through its existing network and through upgrades that are currently being implemented and planned. A new zone substation will need to be delivered at some stage in the future. Electrical reticulation infrastructure will be provided throughout the development by the developer.

Waste services will not be a constraint to development proceeding.

Telecommunications will not be a constraint to development as Government compliant telecommunications providers will supply the necessary services to the development.

Gas services will not be a constraint to development as they are non-essential service and are likely to be delivered by Jemena.

Other local and regional infrastructure will be provided by Council under a Section 94 Plan currently being prepared for the area.

State Infrastructure will also be delivered as part of a State Infrastructure Contribution that is currently being developed.

A proposed staging arrangement is suggested in this report to facilitate the cost-effective release of land.

In conclusion, all infrastructure will be available to support the proposed urban release area of Moss Vale Rd North.

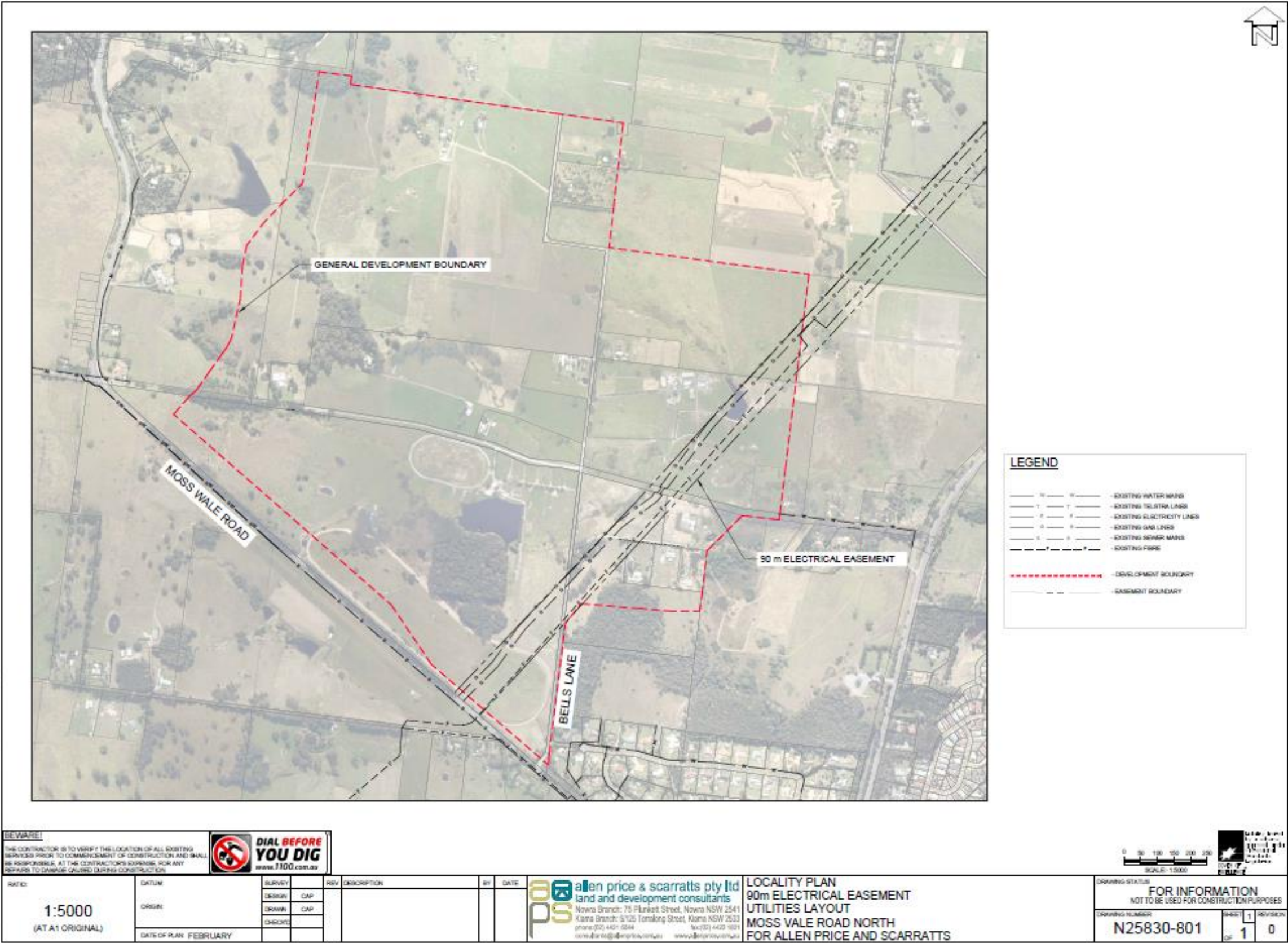
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## Appendices:

- Appendix A: Existing Infrastructure - APS Drawing ref: 25830-801
- Appendix B: Shoalhaven Water Proposed Sewer Infrastructure
- Appendix C: Shoalhaven Water Proposed Water Infrastructure
- Appendix D: Staging Plan

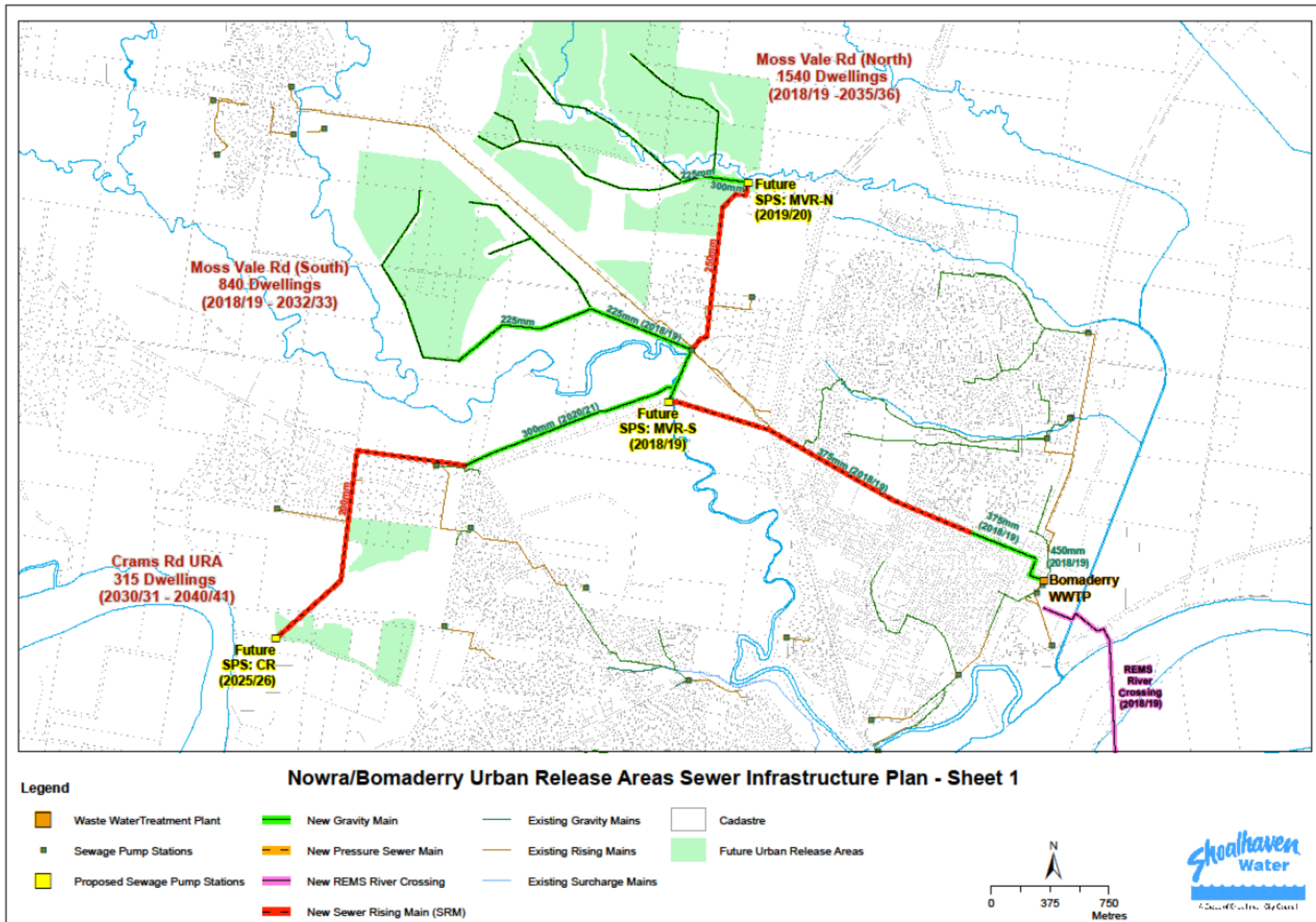


Appendix A



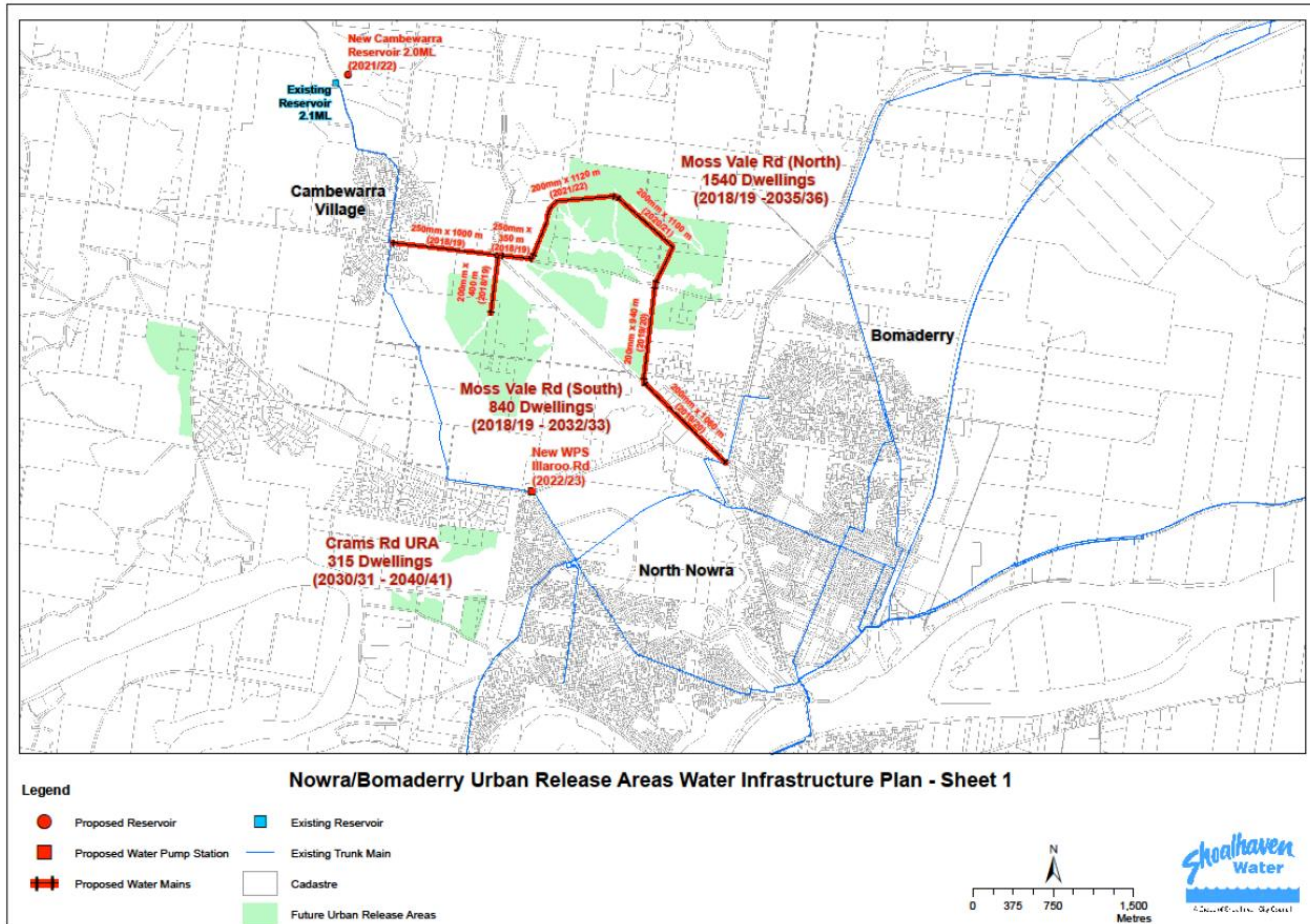


## Appendix B





## Appendix C





## Appendix D

